Production of Ethanol & Update on Ethanol Current Events

Williams SM

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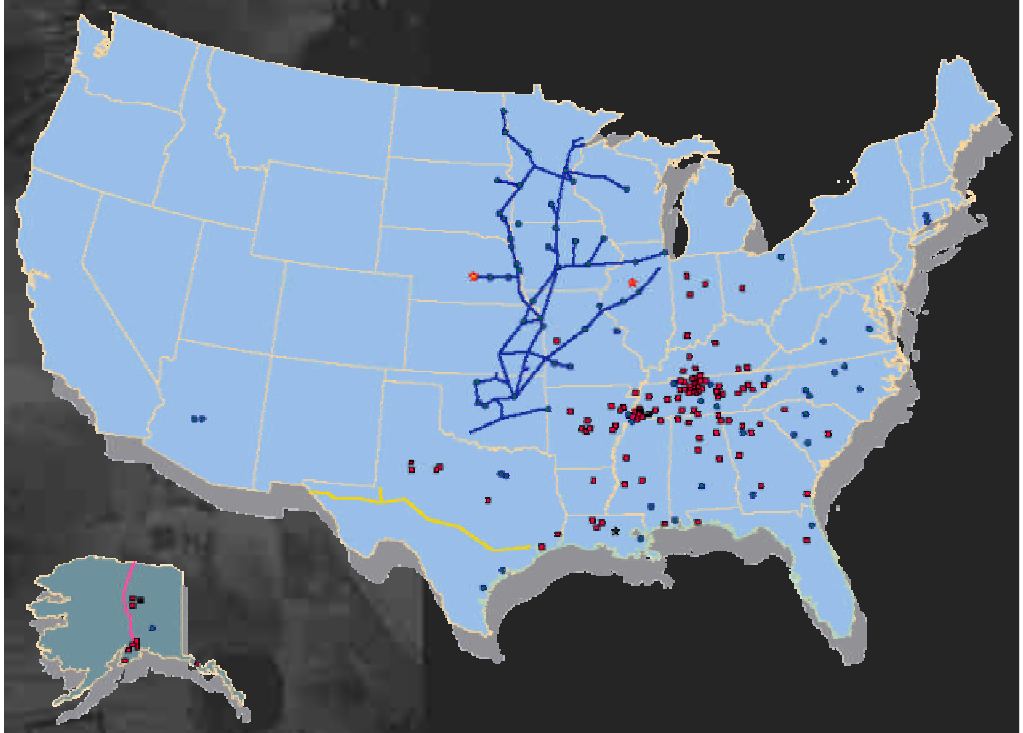
Oakland, California

Our Message

- California oxygenate waiver - Clean Air Act oxygen requirement
- Ethanol is a viable alternative to MTBE and neat ethanol can be shipped in pipelines
- Ethanol production capacity continues to increase.
- CARB's Phase III rules and the market implications for ethanol in California.

Diverse Petroleum Services Network



- **Bio-Energy leader**
- #1 Petroleum storage company in North America
- Largest petroleum transportation provider in the Midwest
- True niche refiner
- Creating 1st "Virtual Supply Network"

Williams Bio-Energy

Fuel ethanol

- ***Gasoline blending***
- ***Clean Burning "Oxygenate"***

Beverage alcohol

- ***Vodka, Bourbon, Tequila production***

Industrial Alcohol

- ***Specialty chemicals***
- ***Vinegar***

Co-Products

- ***Corn gluten meal***
- ***Corn gluten feed***
- ***Distillers Dried Grains***
- ***Brewers yeast***
- ***Carbon Dioxide***

California Ethanol Issues

- California oxygenate wavier has not been granted or denied
- Clean Air Act oxygen standard
- The California MTBE phase out is only 15,037 hours away

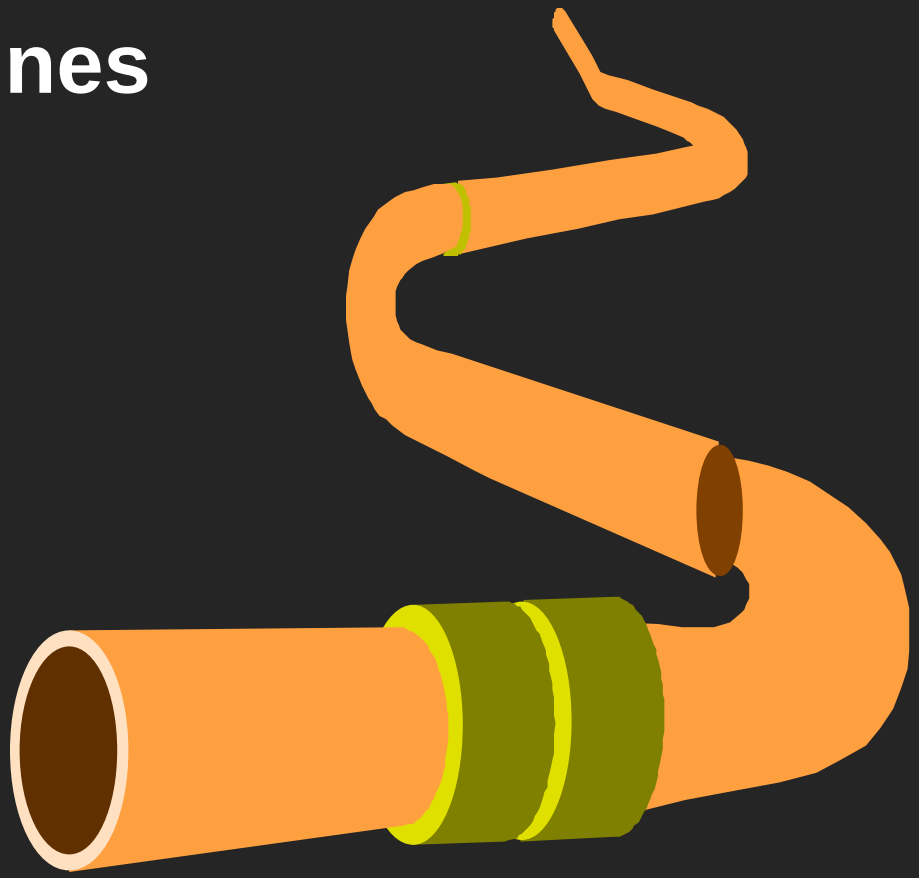
Health & Environment

"The substitution of ethanol and alkylates for MTBE in California's fuel supply will not have any significant air-quality impacts. This finding is supported by theoretical calculations in the South Coast Air Basin using state-of-the-art science tools, an analysis of the impact of uncertainties, air quality measurements in areas that have already introduced ethanol into their fuel supply, and an independent scientific peer review by the University of California".

California Issues - Logistics

- Ethanol storage capacity in place in Los Angeles and San Francisco area terminals
- Current California ethanol market
- Vessel and railcar deliveries available
- We believe ethanol will be transported in “non-traditional” ways

Ethanol in Pipelines



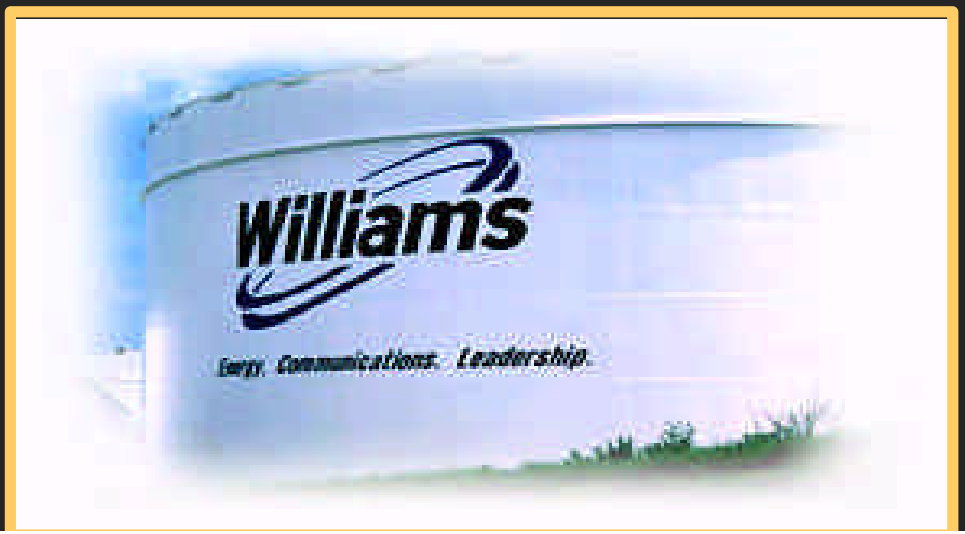
Williams has shipped neat ethanol via pipeline.

Williams Neat Ethanol Test

- Conducted in the early 1980's
- 4,600 barrels of ethanol was shipped in an 8 inch line from Kansas City to Des Moines
- Pipeline constructed in 1930
- Pipeline operated in multi-product service
- Changed to gasoline 10 days prior to ethanol test
- Pigs were used prior to the test
- Ethanol batch profiled & tank tested on receipt

What Happened to Ethanol Quality?

Good	Areas of Concern
• Moisture (Water)	• Color
• Apparent Proof	• Gum
• Interfaces	• Interface handling



We Suggest the Following for Routine Ethanol / Pipeline Shipments

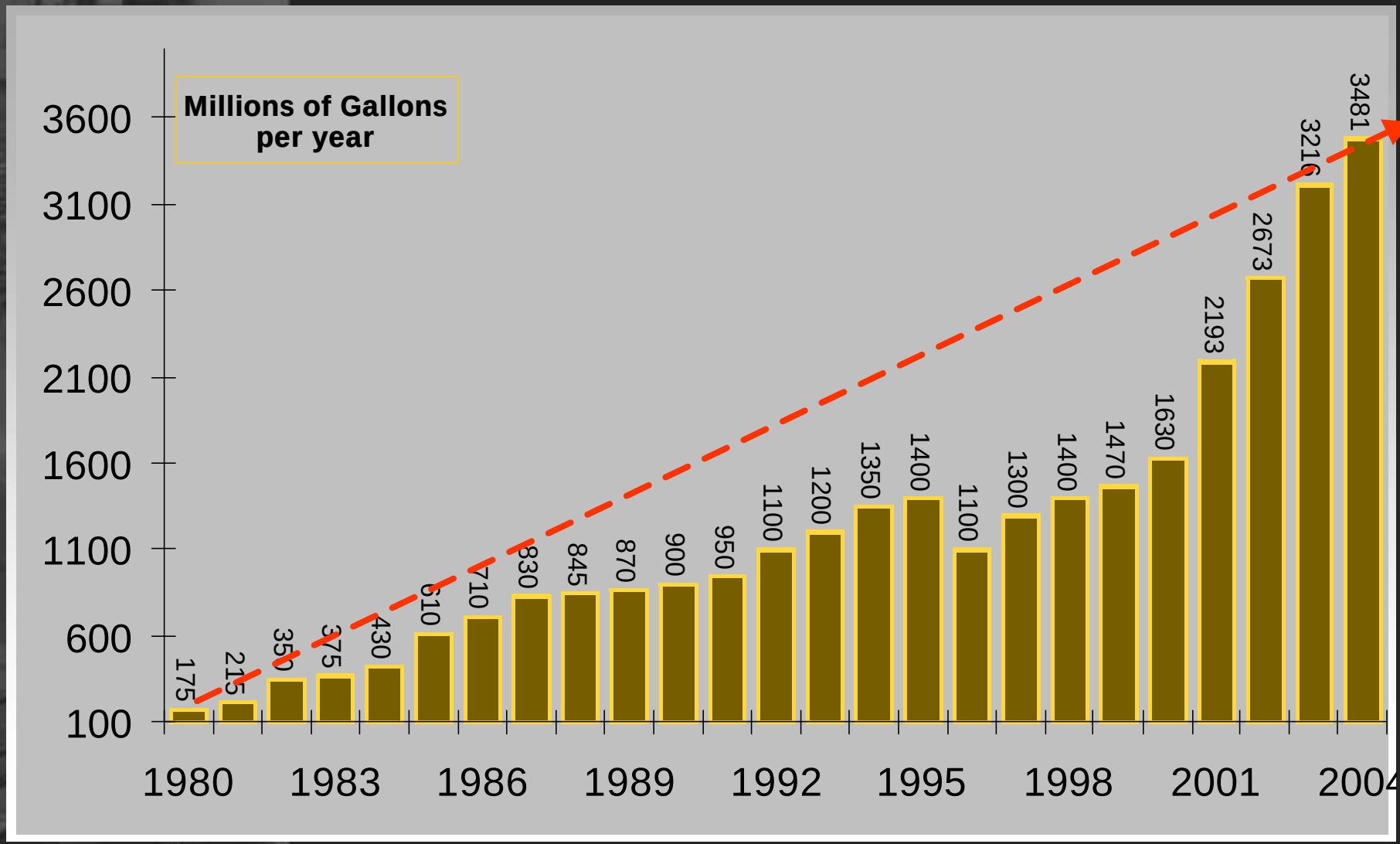
- Frequent dewatering of mainlines using pigs and spheres
- Use closed floater storage tanks to prevent rainwater ingestion
- A commitment to dry storage tanks
- Installation of inline corrosion monitoring
- Possible installation of filtration system
- Ethanol QA oversight program
- Materials compatibility review
- Updated safety documentation & training

Ethanol Pipeline Shipments

"… our experimental pipeline tests indicate that fuel grade ethanol can be successfully transported in a multi-products pipeline system under controlled conditions. The greater the frequency of batches through any system through any given line segment, the fewer the quality problems that we would expect to experience."

* Williams Presentation, March, 1982, Alcohol Week Conference, San Antonio, TEXAS

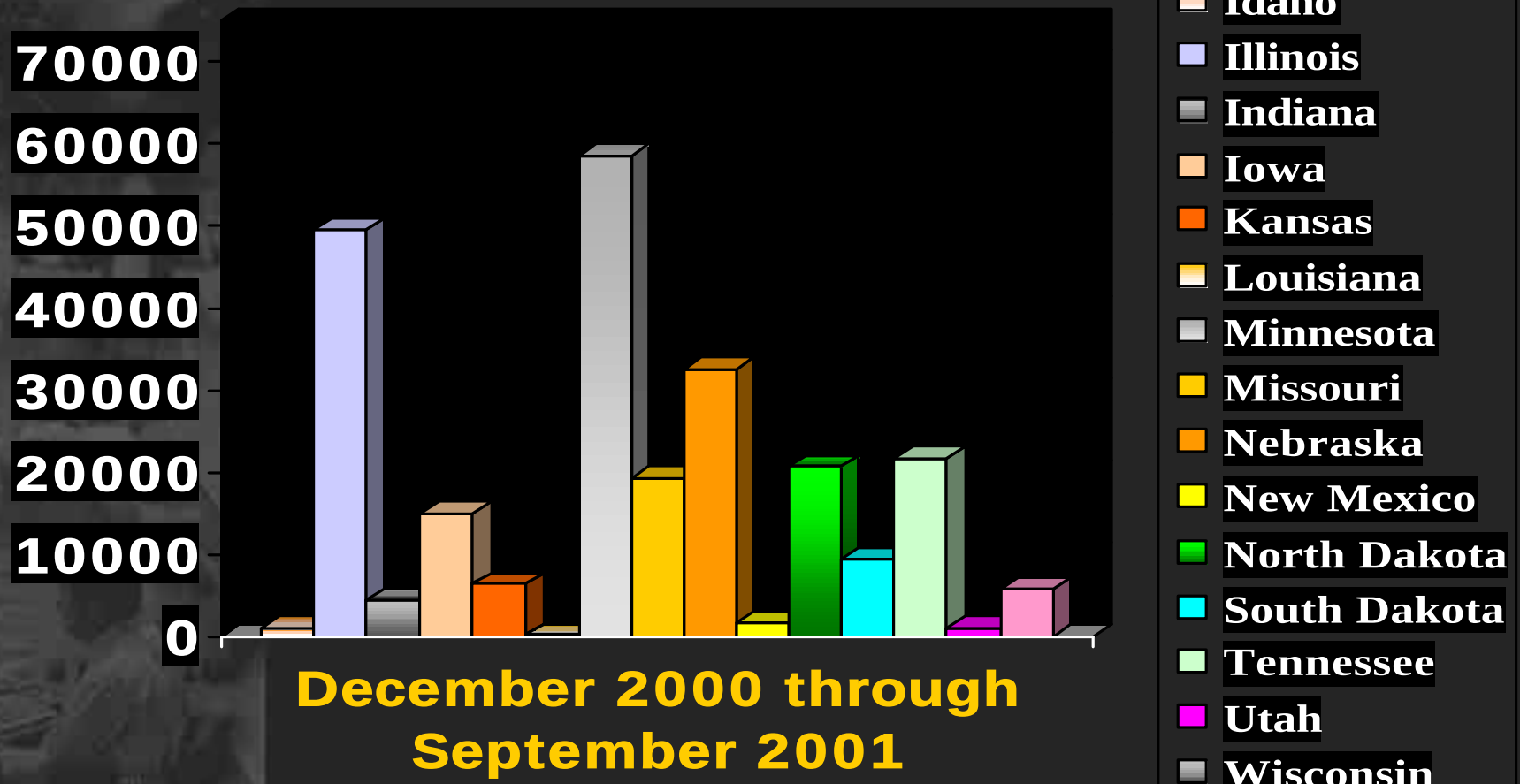
Historical & Projected Ethanol Production



Source: Renewable Fuels Association & AUS Consultants

Anticipated Increase in Ethanol Production - Commodity Credit Corporation Program (By State)

Increased Thousand Gallons
Eligible for Payment
Total = 246,179



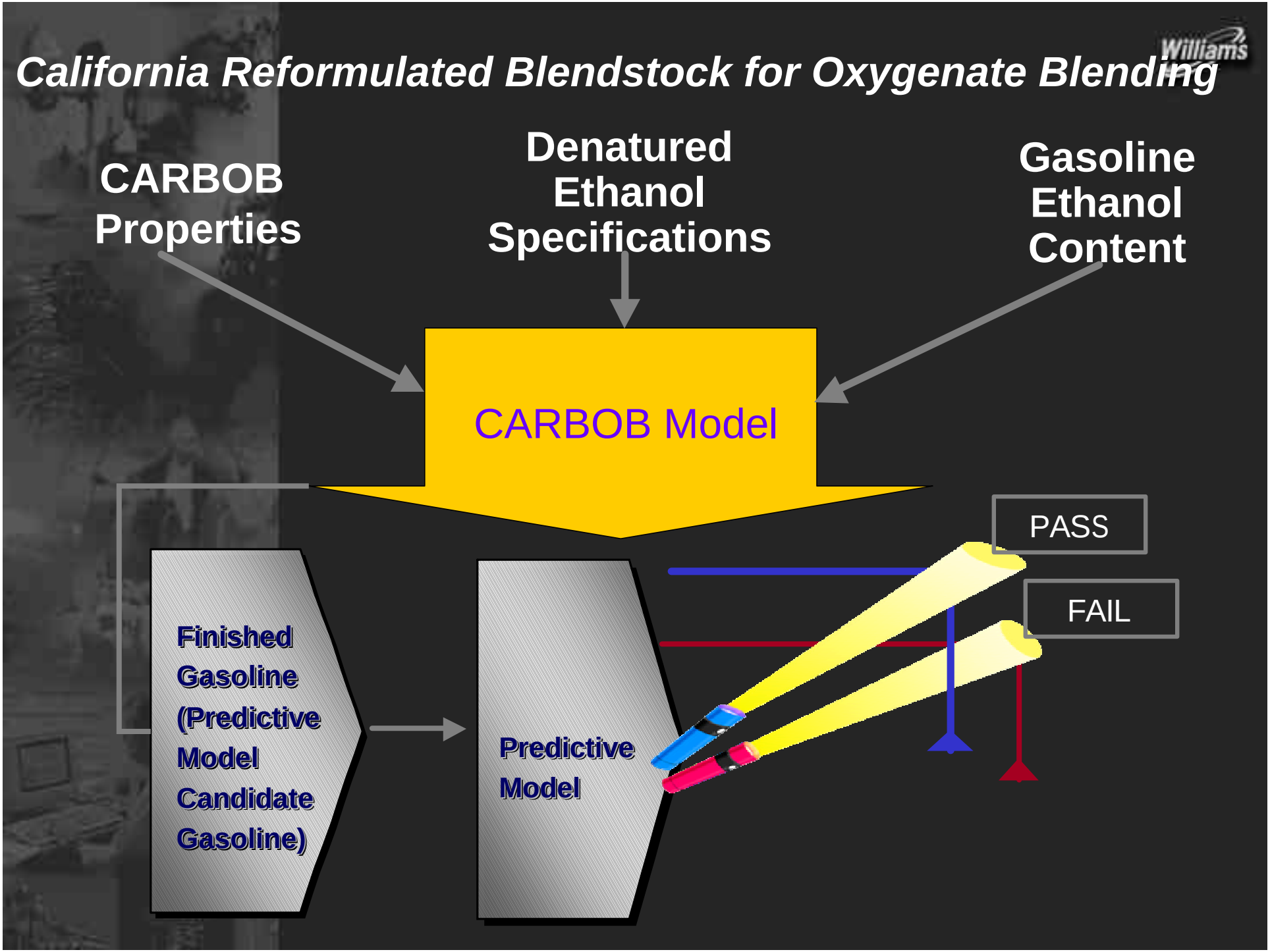
December 2000 through
September 2001

Source: Oxy-Fuels News

California Regulatory Leadership

- The ethanol industry will continue to develop partnering relationships with California agencies & stakeholders to ensure a smooth transition from MTBE to ethanol

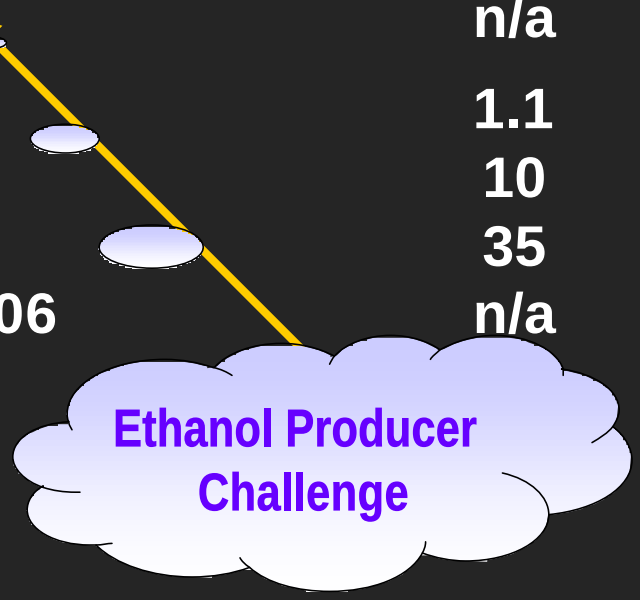
California Reformulated Blendstock for Oxygenate Blending



California Phase III Rulemaking

California Air Resources Board
Specifications for Denatured Ethanol

Property	Specifications for Denatured Ethanol	Specifications for Denaturants
Sulfur, ppm	10	n/a
Benzene, vol %	0.06	1.1
Olefin, vol %	0.5	10
Aromatics, vol %	1.7	35
Others	ASTM 4806	n/a



Takeaways

- The ethanol industry has encouraged EPA to deny ARB's waiver request
- Ethanol will meet the high environmental expectations of California policymakers
- Supply capacity will grow to over 2 billion USG per year in 2001
- Refiners can switch oxygenates "when ready"
- Ethanol can be shipped in untraditional ways
- CARB has imposed cleaner specifications for ethanol than gasoline